

Evaluation of the Real-Time Virtual Support Pathway Child Health Advice in Real-Time Electronically (CHARLiE) in Northwestern BC

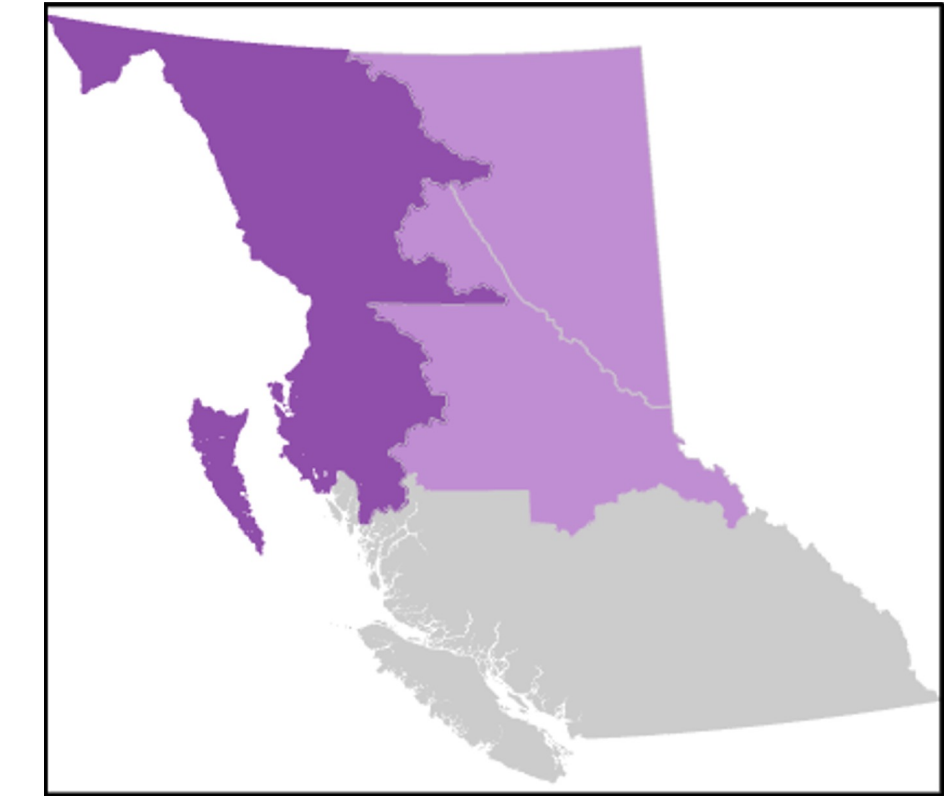
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Background

- Children living in rural, remote, and Indigenous communities have reduced access to pediatric care due to the low number of local pediatricians, who commonly experience heavy call burdens and lack of pediatric allied health support¹⁻³
- Child Health Advice in Real-time Electronically (CHARLiE), is one of the Real Time Virtual Support (RTVS) pathways developed by the the Rural Coordination Centre of BC (RCCbc) to improve access to pediatric care in rural communities

Fig 1. Map of British Columbia, depicting the geographic area of the Northwestern HSDA (dark violet) within the Northern Health Authority (light violet).
https://www2.gov.bc.ca/assets/gov/data/geographic/land-use/administrative-boundaries/health-boundaries/51_northwest.pdf



- Since September 2020, due to an unforeseen shortage of local pediatricians in Terrace, the referral centre for BC's Northwest Health Service Delivery area (HSDA), CHARLiE's virtual consultants have been asked to fill the gaps in pediatric coverage
- Here we (1) describe the experiences of local healthcare providers in utilizing virtual consultants who assisted during a shortage of pediatricians in a community that is generally served by local consultants and (2) make recommendations for improved service delivery

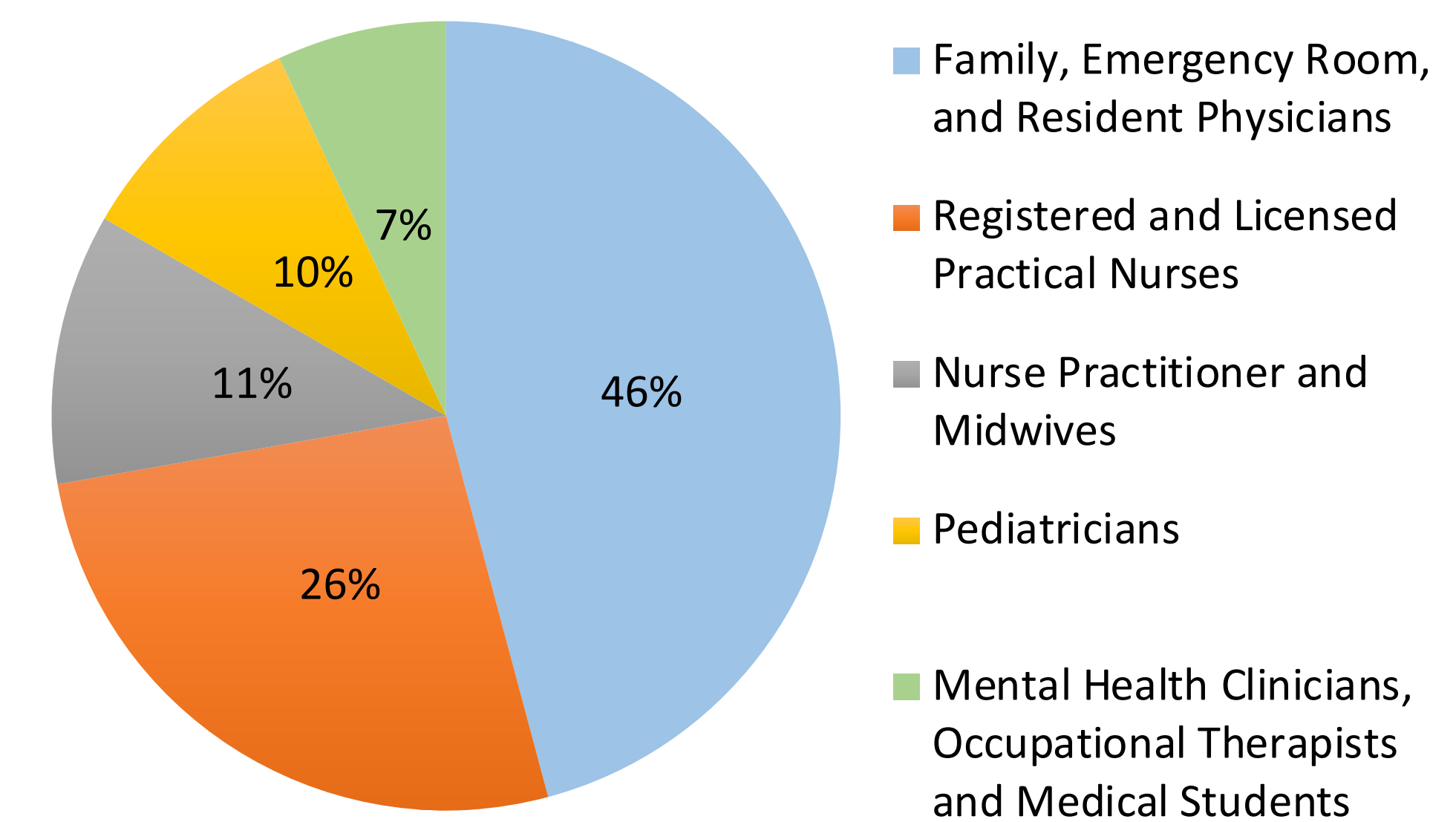
Methods

- A survey and focus groups were used to collect qualitative and quantitative data about the experiences of rural healthcare providers, including registered nurses (RNs), nurse practitioners (NPs), registered midwives (RMs), family physicians, emergency physicians, pediatricians, medical trainees and other allied healthcare professionals
- Data were analyzed to derive patterns, themes and explanatory narratives to understand the successes and challenges of implementing CHARLiE as first on-call for pediatrics in Terrace

Results

Survey results

- 72 participants from 54 communities in Northwestern BC completed surveys, of whom 83% had been involved in CHARLiE consultation



- The majority of CHARLiE users were "satisfied" or "very satisfied" with the following:
 - Overall support (96.1%)
 - User friendliness (94.2%)
 - Efficiency (90.4%)
 - Collegiality and professionalism (96.1%)
 - Guidance for procedural skills (55.7%)
 - Assessment of patients (90.4%)
 - Knowledge of local healthcare resources (75%)
 - Recognition of the caller's scope of practice (88.5%)
 - Provision of education around cases (88.4%)
 - Provision of culturally safe care (90.7%)
- 77.6% reported that CHARLiE improved the access to Pediatric care
- Of the respondents who had not used CHARLiE, the most frequently reported barrier was lack of necessary resources to access the service within the workplace (54.5%)

Focus group results

- Analyses of data derived from 12 focus group interviews (n=39) involving RNs (16), emergency room and family physicians (16), pediatricians (3), healthcare administrators (2), one NP, and one RM revealed 6 key themes, outlined in Table 1

Theme	Observations	Supporting quotes
CHARLiE as an efficient consulting service that promotes collegiality and professionalism	CHARLiE pediatricians were reported to be courteous, helpful and receptive	<i>I think one of the lovely things about CHARLiE, that I think deserves a lot of attention, is their collegiality. The [CHARLiE doctors] are always friendly, they answer, they take it seriously.</i>
Improved access to general pediatric and subspecialty care	Virtual bedside consultation, whereby consultants "lay eyes" on patients and directly counsel families was seen to be helpful for both healthcare provider and families	<i>They take our concerns very seriously. I feel heard, the family feels heard, and often I use [the pediatrician] to communicate with the family to help calm them down... [in situations] where I'm not going to be able to do enough to help their concerns.</i>
CHARLiE as a double-edged sword: Preventing burnout, though raising concern for under-recruitment of local pediatricians	CHARLiE defends against local pediatrician burnout; however, there was concern that CHARLiE may curb efforts to recruit and retain local pediatricians	<i>When the model was proposed, it was proposed [as] a bridge... never a solution. And it's difficult because when you offer, or at least I perceive when you offer a solution, even if it's temporary... [it can be hard for people to] remember that it's still an issue when it's no longer a crisis.</i>
Physical and technologic limitations of virtual consultants	Inconsistent WiFi access and the inability for a virtual consultant to provide hands on patient care (e.g. perform examinations and procedures) were seen as major shortcomings	<i>[CHARLiE] doesn't replace the on ground issues... for procedural skills... neonatal resuscitation, insertion of umbilical lines, and giving surfactant through an ET tube. It doesn't matter who is guiding it, the risks tend to be too much [for non-pediatricians to perform the procedures].</i>
Fractured continuity of care and support for mental health	There is lack of continuity among CHARLiE providers when managing children over the course of multiple days	<i>You could call CHARLiE every day and get a different doc and review the whole case... that's one of the big negatives is that CHARLiE's very episodic. So if the kid needs follow-up, then that's not really there.</i>
CHARLiE as a provincial service: Opportunities to expand knowledge of community-specific resources	CHARLiE pediatricians have limited site-specific knowledge of healthcare resources (e.g. healthcare personnel, laboratory/imaging diagnostics)	<i>When we call CHARLiE it does take some explaining for them to understand where we're going from, and our local contracts in terms of what our resources are, where we normally refer to...</i>

Table 1. Focus group themes, observations, and supporting quotes

Discussion

- Care providers indicate a strong preference for consulting local pediatricians (over CHARLiE pediatricians) for their local knowledge/expertise and the ability to "hand over" the direct care of their patients to a local specialist
- The inability for CHARLiE pediatricians to perform hands on procedures results in (1) procedural direction whereby the rural care provider is supported to complete the procedure, (2) patient transfer to a centre whereby local personnel are comfortable performing the procedure, or (3) calling in an off-duty local pediatrician
- Care providers practicing in remote communities who do not have access to in-person pediatricians noted strengths in video-conferencing with a CHARLiE pediatrician when compared to a conventional phone call, including the ability for consultants to virtually "lay eyes" on patients and communicate directly with families
- Virtual consultants can effectively support existing care providers during times of crisis and reduce on-call workload of local consultants, perhaps reducing burnout

Summary of Recommendations

- Preparation of documents outlining the specific healthcare resources for each community (e.g. proximity to higher level of care; capacity for critical care support; local personnel including resources) to help contextualize each consultation for CHARLiE pediatricians
- Encouragement of closed-loop communication between CHARLiE pediatricians and the consulting service to ensure clear division of roles and responsibilities
- Protocolization whereby CHARLiE pediatricians are responsible for indirect patient care tasks (e.g. coordinating patient transfer, subspecialist consultation)
- Improving access to written documentation that is visible to all care teams (e.g. within the provincial medical record)
- Ensuring provision of handover between CHARLiE pediatricians for active cases
- Defining pathways whereby mental health resources are accessed
- Ensuring local efforts to recruit and retain on-the-ground pediatricians in rural communities

Conclusion

- While maintaining a full complement of on-the-ground pediatricians remains the ultimate goal for Northwestern BC, in the absence of this, CHARLiE played a crucial role in ensuring timely access to pediatric care and ameliorating burnout for local pediatricians

Acknowledgements

- The authors would like to acknowledge the community healthcare leaders that were involved in the development of the current study, in addition to all survey and focus group participants, who continue to demonstrate an unwavering commitment to the health and well-being of children and families living in Northwestern BC
- This work is funded by the Ministry of Health, the Rural Coordination Centre of BC, and the Joint Standing Committee on Rural Issues in BC (grant number: AWD-020971)

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